

<110>    Sims, John E.  
          Smith, Dirk E.

<130> 3151-A

<141> 2001-10-26

<151> 2000-10-31

<160> 4

<170> PatentIn version 3.1

 $\langle 210 \rangle$  1

<211> 2064

<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (1) .. (2064)

<223>

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<221> misc_feature
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$$\langle 222 \rangle \quad (1792) \dots (1792)$$

<223> "n" = a or c. Xaa at amino acid position 598 is Thr or Pro.

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caa agt gat gcc tca gaa cgc tgc gat gac tgg gga cta gac acc atg 96  
Gln Ser Asp Ala Ser Glu Arg Cys Asp Asp Trp Gly Leu Asp Thr Met  
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agg caa atc caa gtg ttt gaa gat gag cca gct cgc atc aag tgc cca 144  
Arg Gln Ile Gln Val Phe Glu Asp Glu Pro Ala Arg Ile Lys Cys Pro  
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ctc ttt gaa cac ttc ttg aaa ttc aac tac agc aca gcc cat tca gct 192  
Leu Phe Glu His Phe Leu Lys Phe Asn Tyr Ser Thr Ala His Ser Ala  
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ggc ctt act ctg atc tgg tat tgg act agg cag gac cgg gac ctt gag 240  
Gly Leu Thr Leu Ile Trp Tyr Trp Thr Arg Gln Asp Arg Asp Leu Glu  
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gag cca att aac ttc cgc ctc ccc gag aac cgc att agt aag gag aaa 288  
Glu Pro Ile Asn Phe Arg Leu Pro Glu Asn Arg Ile Ser Lys Glu Lys  
85 90 95

gat gtg ctg tgg ttc cgg ccc act ctc ctc aat gac act ggc aac tat	336
Asp Val Leu Trp Phe Arg Pro Thr Leu Leu Asn Asp Thr Gly Asn Tyr	
100 105 110	
acc tgc atg tta agg aac act aca tat tgc agc aaa gtt gca ttt ccc	384
Thr Cys Met Leu Arg Asn Thr Tyr Cys Ser Lys Val Ala Phe Pro	
115 120 125	
ttg gaa gtt gtt caa aaa gac agc tgt ttc aat tcc ccc atg aaa ctc	432
Leu Glu Val Val Gln Lys Asp Ser Cys Phe Asn Ser Pro Met Lys Leu	
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cca gtg cat aaa ctg tat ata gaa tat ggc att cag agg atc act tgt	480
Pro Val His Lys Leu Tyr Ile Glu Tyr Gly Ile Gln Arg Ile Thr Cys	
145 150 155 160	
cca aat gta gat gga tat ttt cct tcc agt gtc aaa ccg act atc act	528
Pro Asn Val Asp Gly Tyr Phe Pro Ser Ser Val Lys Pro Thr Ile Thr	
165 170 175	
tgg tat atg ggc tgt tat aaa ata cag aat ttt aat aat gta ata ccc	576
Trp Tyr Met Gly Cys Tyr Lys Ile Gln Asn Phe Asn Asn Val Ile Pro	
180 185 190	
gaa ggt atg aac ttg agt ttc ctc att gcc tta att tca aat aat gga	624
Glu Gly Met Asn Leu Ser Phe Leu Ile Ala Leu Ile Ser Asn Asn Gly	
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aat tac aca tgt gtt gtt aca tat cca gaa aat gga cgt acg ttt cat	672
Asn Tyr Thr Cys Val Val Thr Tyr Pro Glu Asn Gly Arg Thr Phe His	
210 215 220	
ctc acc agg act ctg act gta aag gta gta ggc tct cca aaa aat gca	720
Leu Thr Arg Thr Leu Thr Val Lys Val Val Gly Ser Pro Lys Asn Ala	
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gtg ccc cct gtg atc cat tca cct aat gat cat gtg gtc tat gag aaa	768
Val Pro Pro Val Ile His Ser Pro Asn Asp His Val Val Tyr Glu Lys	
245 250 255	
gaa cca gga gag gag cta ctc att ccc tgt acg gtc tat ttt agt ttt	816
Glu Pro Gly Glu Glu Leu Leu Ile Pro Cys Thr Val Tyr Phe Ser Phe	
260 265 270	
ctg atg gat tct cgc aat gag gtt tgg tgg acc att gat gga aaa aaa	864
Leu Met Asp Ser Arg Asn Glu Val Trp Trp Thr Ile Asp Gly Lys Lys	
275 280 285	
cct gat gac atc act att gat gtc acc att aac gaa agt ata agt cat	912
Pro Asp Asp Ile Thr Ile Asp Val Thr Ile Asn Glu Ser Ile Ser His	
290 295 300	
agt aga aca gaa gat gaa aca aga act cag att ttg agc atc aag aaa	960
Ser Arg Thr Glu Asp Glu Thr Arg Thr Gln Ile Leu Ser Ile Lys Lys	
305 310 315 320	
gtt acc tct gag gat ctc aag cgc agc tat gtc tgt cat gct aga agt	1008
Val Thr Ser Glu Asp Leu Lys Arg Ser Tyr Val Cys His Ala Arg Ser	
325 330 335	

gcc aaa ggc gaa gtt gcc aaa gca gcc aag gtg aag cag aaa gtg cca Ala Lys Gly Glu Val Ala Lys Ala Ala Lys Val Lys Gln Lys Val Pro 340 345 350	1056
gct cca aga tac aca gtg gaa ctg gct tgt ggt ttt gga gcc aca gtc Ala Pro Arg Tyr Thr Val Glu Leu Ala Cys Gly Phe Gly Ala Thr Val 355 360 365	1104
ctg cta gtg gtg att ctc att gtt gtt tac cat gtt tac tgg cta gag Leu Leu Val Val Ile Leu Ile Val Val Tyr His Val Tyr Trp Leu Glu 370 375 380	1152
atg gtc cta ttt tac cgg gct cat ttt gga aca gat gaa acc att tta Met Val Leu Phe Tyr Arg Ala His Phe Gly Thr Asp Glu Thr Ile Leu 385 390 395 400	1200
gat gga aaa gag tat gat att tat gta tcc tat gca agg aat gcg gaa Asp Gly Lys Glu Tyr Asp Ile Tyr Val Ser Tyr Ala Arg Asn Ala Glu 405 410 415	1248
gaa gaa gaa ttt gta tta ctg acc ctc cgt gga gtt ttg gag aat gaa Glu Glu Glu Phe Val Leu Leu Thr Leu Arg Gly Val Leu Glu Asn Glu 420 425 430	1296
ttt gga tac aag ctg tgc atc ttt gac cga gac agt ctg cct ggg gga Phe Gly Tyr Lys Leu Cys Ile Phe Asp Arg Asp Ser Leu Pro Gly Gly 435 440 445	1344
aat aca gtg gaa gca gtt ttt gat ttc att cag aga agc aga agg atg Asn Thr Val Glu Ala Val Phe Asp Phe Ile Gln Arg Ser Arg Arg Met 450 455 460	1392
att gtt gtt ctg agc cct gac tat gtg aca gaa aag agc atc agc atg Ile Val Val Leu Ser Pro Asp Tyr Val Thr Glu Lys Ser Ile Ser Met 465 470 475 480	1440
ctg gag ttt aaa ctg ggt gtc atg tgc cag aac tcc att gcc acc aag Leu Glu Phe Lys Leu Gly Val Met Cys Gln Asn Ser Ile Ala Thr Lys 485 490 495	1488
ctc att gtg gtt gag tac cgt ccc ctt gag cac ccg cac cca ggc att Leu Ile Val Val Glu Tyr Arg Pro Leu Glu His Pro His Pro Gly Ile 500 505 510	1536
ctt cag ctc aaa gag tct gtg tct ttt gtg agc tgg aag gga gaa aag Leu Gln Leu Lys Glu Ser Val Ser Phe Val Ser Trp Lys Gly Glu Lys 515 520 525	1584
tcc aaa cat tct ggc tct aaa ttc tgg aaa gct ttg cgg ttg gct ctt Ser Lys His Ser Gly Ser Lys Phe Trp Lys Ala Leu Arg Leu Ala Leu 530 535 540	1632
ccc ctg aga agt ctg agt gcc agt tct ggc tgg aat gag agc tgc tct Pro Leu Arg Ser Leu Ser Ala Ser Ser Gly Trp Asn Glu Ser Cys Ser 545 550 555 560	1680
tcc cag tct gac atc agt ctg gat cac gtt caa agg agg aga agt cgt Ser Gln Ser Asp Ile Ser Leu Asp His Val Gln Arg Arg Arg Ser Arg 565 570 575	1728

ttg aaa gag ccc cca gaa ctt cag agc tca gag agg gct gca ggt agc 1776  
 Leu Lys Glu Pro Pro Glu Leu Gln Ser Ser Glu Arg Ala Ala Gly Ser  
 580 585 590

cct cca gcc cca ggc nca atg tcc aag cac cga ggg aag tcc tcc gcc 1824  
 Pro Pro Ala Pro Gly Xaa Met Ser Lys His Arg Gly Lys Ser Ser Ala  
 595 600 605

acc tgc cgc tgt tgt gtc acc tac tgt gaa gga gag aat cac ctt agg 1872  
 Thr Cys Arg Cys Cys Val Thr Tyr Cys Glu Gly Glu Asn His Leu Arg  
 610 615 620

aac aag agc cgg gca gag att cat aac cag ccc cag tgg gag aca cac 1920  
 Asn Lys Ser Arg Ala Glu Ile His Asn Gln Pro Gln Trp Glu Thr His  
 625 630 635 640

ctc tgt aag cct gtt ccc caa gag tca gaa act caa tgg ata caa aat 1968  
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 645 650 655

ggc acc aga ttg gaa ccc cct gct ccc cag atc tca gcc ctt gct ctt 2016  
 Gly Thr Arg Leu Glu Pro Pro Ala Pro Gln Ile Ser Ala Leu Ala Leu  
 660 665 670

cat cat ttc acg gac tta tcc aat aac aac gac ttt tat atc cta taa 2064  
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<222> (598)..(598)

<223> The 'Xaa' at location 598 stands for Thr or Pro.

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 35 40 45

Leu Phe Glu His Phe Leu Lys Phe Asn Tyr Ser Thr Ala His Ser Ala  
 50 55 60

Gly Leu Thr Leu Ile Trp Tyr Trp Thr Arg Gln Asp Arg Asp Leu Glu  
 65 70 75 80

Glu Pro Ile Asn Phe Arg Leu Pro Glu Asn Arg Ile Ser Lys Glu Lys  
85 90 95

Asp Val Leu Trp Phe Arg Pro Thr Leu Leu Asn Asp Thr Gly Asn Tyr  
100 105 110

Thr Cys Met Leu Arg Asn Thr Thr Tyr Cys Ser Lys Val Ala Phe Pro  
115 120 125

Leu Glu Val Val Gln Lys Asp Ser Cys Phe Asn Ser Pro Met Lys Leu  
130 135 140

Pro Val His Lys Leu Tyr Ile Glu Tyr Gly Ile Gln Arg Ile Thr Cys  
145 150 155 160

Pro Asn Val Asp Gly Tyr Phe Pro Ser Ser Val Lys Pro Thr Ile Thr  
165 170 175

Trp Tyr Met Gly Cys Tyr Lys Ile Gln Asn Phe Asn Asn Val Ile Pro  
180 185 190

Glu Gly Met Asn Leu Ser Phe Leu Ile Ala Leu Ile Ser Asn Asn Gly  
195 200 205

Asn Tyr Thr Cys Val Val Thr Tyr Pro Glu Asn Gly Arg Thr Phe His  
210 215 220

Leu Thr Arg Thr Leu Thr Val Lys Val Val Gly Ser Pro Lys Asn Ala  
225 230 235 240

Val Pro Pro Val Ile His Ser Pro Asn Asp His Val Val Tyr Glu Lys  
245 250 255

Glu Pro Gly Glu Glu Leu Leu Ile Pro Cys Thr Val Tyr Phe Ser Phe  
260 265 270

Leu Met Asp Ser Arg Asn Glu Val Trp Trp Thr Ile Asp Gly Lys Lys  
275 280 285

Pro Asp Asp Ile Thr Ile Asp Val Thr Ile Asn Glu Ser Ile Ser His  
290 295 300

Ser Arg Thr Glu Asp Glu Thr Arg Thr Gln Ile Leu Ser Ile Lys Lys  
305 310 315 320

Val Thr Ser Glu Asp Leu Lys Arg Ser Tyr Val Cys His Ala Arg Ser  
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Ala Lys Gly Glu Val Ala Lys Ala Ala Lys Val Lys Gln Lys Val Pro  
340 345 350

Ala Pro Arg Tyr Thr Val Glu Leu Ala Cys Gly Phe Gly Ala Thr Val  
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Leu Leu Val Val Ile Leu Ile Val Val Tyr His Val Tyr Trp Leu Glu  
370 375 380

Met Val Leu Phe Tyr Arg Ala His Phe Gly Thr Asp Glu Thr Ile Leu  
385 390 395 400

Asp Gly Lys Glu Tyr Asp Ile Tyr Val Ser Tyr Ala Arg Asn Ala Glu  
405 410 415

Glu Glu Glu Phe Val Leu Leu Thr Leu Arg Gly Val Leu Glu Asn Glu  
420 425 430

Phe Gly Tyr Lys Leu Cys Ile Phe Asp Arg Asp Ser Leu Pro Gly Gly  
435 440 445

Asn Thr Val Glu Ala Val Phe Asp Phe Ile Gln Arg Ser Arg Arg Met  
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Ile Val Val Leu Ser Pro Asp Tyr Val Thr Glu Lys Ser Ile Ser Met  
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485 490 495

Leu Ile Val Val Glu Tyr Arg Pro Leu Glu His Pro His Pro Gly Ile  
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Leu Gln Leu Lys Glu Ser Val Ser Phe Val Ser Trp Lys Gly Glu Lys  
515 520 525

Ser Lys His Ser Gly Ser Lys Phe Trp Lys Ala Leu Arg Leu Ala Leu  
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Pro Leu Arg Ser Leu Ser Ala Ser Ser Gly Trp Asn Glu Ser Cys Ser  
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Ser Gln Ser Asp Ile Ser Leu Asp His Val Gln Arg Arg Arg Ser Arg  
565 570 575

Leu Lys Glu Pro Pro Glu Leu Gln Ser Ser Glu Arg Ala Ala Gly Ser  
580 585 590

Pro Pro Ala Pro Gly Xaa Met Ser Lys His Arg Gly Lys Ser Ser Ala  
595 600 605

Thr Cys Arg Cys Cys Val Thr Tyr Cys Glu Gly Glu Asn His Leu Arg  
610 615 620

Asn Lys Ser Arg Ala Glu Ile His Asn Gln Pro Gln Trp Glu Thr His  
625 630 635 640

Leu Cys Lys Pro Val Pro Gln Glu Ser Glu Thr Gln Trp Ile Gln Asn  
645 650 655

Gly Thr Arg Leu Glu Pro Pro Ala Pro Gln Ile Ser Ala Leu Ala Leu  
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His His Phe Thr Asp Leu Ser Asn Asn Asn Asp Phe Tyr Ile Leu  
675 680 685

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cag agt cat gct tcg gag cgc tgt gat gac tgg gga cta gat acc atg 96  
Gln Ser His Ala Ser Glu Arg Cys Asp Asp Trp Gly Leu Asp Thr Met  
20 25 30

cga caa atc caa gtg ttt gaa gat gag ccg gct cga atc aag tgc ccc 144  
Arg Gln Ile Gln Val Phe Glu Asp Glu Pro Ala Arg Ile Lys Cys Pro  
35 40 45

ctc ttt gaa cac ttc ctg aag tac aac tac agc act gcc cat tcc tct 192  
Leu Phe Glu His Phe Leu Lys Tyr Asn Tyr Ser Thr Ala His Ser Ser  
50 55 60

ggc ctt acc ctg atc tgg tac tgg acc agg caa gac cgg gac ctg gag 240  
 Gly Leu Thr Leu Ile Trp Tyr Trp Thr Arg Gln Asp Arg Asp Leu Glu  
 65 70 75 80

gag ccc att aac ttc cgc ctc cca gag aat cgc atc agt aag gag aaa 288  
 Glu Pro Ile Asn Phe Arg Leu Pro Glu Asn Arg Ile Ser Lys Glu Lys  
 85 90 95

gat gtg ctc tgg ttc cgg ccc acc ctc ctc aat gac acg ggc aat tac 336  
 Asp Val Leu Trp Phe Arg Pro Thr Leu Leu Asn Asp Thr Gly Asn Tyr  
 100 105 110

acc tgc atg ttg agg aac aca act tac tgc agc aaa gtt gca ttt ccc 384  
 Thr Cys Met Leu Arg Asn Thr Thr Tyr Cys Ser Lys Val Ala Phe Pro  
 115 120 125

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 130 135 140

cca gtg cac aag atg tat att gaa cat ggc att cat aag atc aca tgt 480  
 Pro Val His Lys Met Tyr Ile Glu His Gly Ile His Lys Ile Thr Cys  
 145 150 155 160

cca aat gta gac gga tac ttt cct tcc agt gtc aaa cca tcg gtc act 528  
 Pro Asn Val Asp Gly Tyr Phe Pro Ser Ser Val Lys Pro Ser Val Thr  
 165 170 175

tgg tat aag ggt tgt act gaa ata gtg gac ttt cat aat gta cta ccc 576  
 Trp Tyr Lys Gly Cys Thr Glu Ile Val Asp Phe His Asn Val Leu Pro  
 180 185 190

gag ggc atg aac ttg agc ttt ttc atc ccc ttg gtt tca aat aac gga 624  
 Glu Gly Met Asn Leu Ser Phe Phe Ile Pro Leu Val Ser Asn Asn Gly  
 195 200 205

aat tac aca tgt gtg gtt aca tat cct gaa aac gga cgt ctc ttt cac 672  
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 210 215 220

ctc acc agg act gtg act gta aag gtg gtg ggc tca cca aag gat gca 720  
 Leu Thr Arg Thr Val Thr Val Lys Val Val Gly Ser Pro Lys Asp Ala  
 225 230 235 240

ttg cca ccc cag atc tat tct cca aat gac cgt gtt gtc tat gag aaa 768  
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 245 250 255

gaa cca gga gag gaa ctg gtt att ccc tgc aaa gtc tat ttc agt ttc 816  
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 260 265 270

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 275 280 285

cct gat gac gtc aca gtc gac atc act att aat gaa agt gta agt tat 912  
 Pro Asp Asp Val Thr Val Asp Ile Thr Ile Asn Glu Ser Val Ser Tyr  
 290 295 300



tct tca acg gaa gat gaa aca agg act cag att ttg agc atc aag aaa	960
Ser Ser Thr Glu Asp Glu Thr Arg Thr Gln Ile Leu Ser Ile Lys Lys	
305 310 315 320	
gtc acc ccg gag gat ctc agg cgc aac tat gtc tgt cat gct cga aat	1008
Val Thr Pro Glu Asp Leu Arg Arg Asn Tyr Val Cys His Ala Arg Asn	
325 330 335	
acc aaa ggg gaa gct gag cag gct gcc aag gtg aaa cag aaa gtc ata	1056
Thr Lys Gly Glu Ala Glu Gln Ala Ala Lys Val Lys Gln Lys Val Ile	
340 345 350	
cca cca agg tac aca gta gaa ctc gcc tgt ggt ttt gga gcc acg gtc	1104
Pro Pro Arg Tyr Thr Val Glu Leu Ala Cys Gly Phe Gly Ala Thr Val	
355 360 365	
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Phe Leu Val Val Val Leu Ile Val Val Tyr His Val Tyr Trp Leu Glu	
370 375 380	
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Met Val Leu Phe Tyr Arg Ala His Phe Gly Thr Asp Glu Thr Ile Leu	
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Asp Gly Lys Glu Tyr Asp Ile Tyr Val Ser Tyr Ala Arg Asn Val Glu	
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gaa gag gaa ttt gtg ctg ctg acg ctg cgt gga gtt ttg gag aat gag	1296
Glu Glu Glu Phe Val Leu Leu Thr Leu Arg Gly Val Leu Glu Asn Glu	
420 425 430	
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Phe Gly Tyr Lys Leu Cys Ile Phe Asp Arg Asp Ser Leu Pro Gly Gly	
435 440 445	
aat acc gtg gaa gca gtt ttt gat ttc att cag agg agc cga agg atg	1392
Asn Thr Val Glu Ala Val Phe Asp Phe Ile Gln Arg Ser Arg Arg Met	
450 455 460	
att gtt gtc ctg agc cct gac tat gtg aca gaa aag agc atc agc atg	1440
Ile Val Val Leu Ser Pro Asp Tyr Val Thr Glu Lys Ser Ile Ser Met	
465 470 475 480	
ctg gag ttt aag ctg ggt gtc atg tgc cag aac tcc att gcc act aag	1488
Leu Glu Phe Lys Leu Gly Val Met Cys Gln Asn Ser Ile Ala Thr Lys	
485 490 495	
ctc att gtg gtg gag tac cgt ccg ctt gag caa ccc cat cca ggc atc	1536
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515 520 525	
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Ser Lys His Ser Gly Ser Lys Phe Trp Lys Ala Leu Arg Leu Ala Leu	
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tct cag tct gac atc agt ctg gat cat gtt cag agg aga agt cgt ttg 1728  
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 565 570 575

aaa gag ccc cca gaa ctc cga agc tca gag agg gtg tct gga gca gag 1776  
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 580 585 590

cca gcc ccg ggc acg atg tcc aag cac cga ggg aaa ccc tca gca gcc 1824  
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 595 600 605

tgt cgc tgc tgt gtc acc tac tgt gaa gga gaa agt cac ctc agg agc 1872  
 Cys Arg Cys Cys Val Thr Tyr Cys Glu Gly Glu Ser His Leu Arg Ser  
 610 615 620

aag agc cgg gca gag atg cac acg cat ccc cag tgg gaa aca cac ctc 1920  
 Lys Ser Arg Ala Glu Met His Thr His Pro Gln Trp Glu Thr His Leu  
 625 630 635 640

tgt aag cct cct ctc caa gag tct gaa agt cag tgg ata caa aat ggc 1968  
 Cys Lys Pro Pro Leu Gln Glu Ser Glu Ser Gln Trp Ile Gln Asn Gly  
 645 650 655

acc cga ccc gaa ccc gct ccc cag atc tca gct ctt gca ctc cgc cac 2016  
 Thr Arg Pro Glu Pro Ala Pro Gln Ile Ser Ala Leu Ala Leu Arg His  
 660 665 670

ttt aca gat tta tcc aat aac aat gac ttt tat atc cta taa 2058  
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 675 680 685

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Arg Gln Ile Gln Val Phe Glu Asp Glu Pro Ala Arg Ile Lys Cys Pro  
 35 40 45

Leu Phe Glu His Phe Leu Lys Tyr Asn Tyr Ser Thr Ala His Ser Ser  
 50 55 60

Gly Leu Thr Leu Ile Trp Tyr Trp Thr Arg Gln Asp Arg Asp Leu Glu  
65 70 75 80

Glu Pro Ile Asn Phe Arg Leu Pro Glu Asn Arg Ile Ser Lys Glu Lys  
85 90 95

Asp Val Leu Trp Phe Arg Pro Thr Leu Leu Asn Asp Thr Gly Asn Tyr  
100 105 110

Thr Cys Met Leu Arg Asn Thr Thr Tyr Cys Ser Lys Val Ala Phe Pro  
115 120 125

Leu Glu Val Val Gln Lys Asp Ser Cys Phe Asn Ser Ala Met Arg Phe  
130 135 140

Pro Val His Lys Met Tyr Ile Glu His Gly Ile His Lys Ile Thr Cys  
145 150 155 160

Pro Asn Val Asp Gly Tyr Phe Pro Ser Ser Val Lys Pro Ser Val Thr  
165 170 175

Trp Tyr Lys Gly Cys Thr Glu Ile Val Asp Phe His Asn Val Leu Pro  
180 185 190

Glu Gly Met Asn Leu Ser Phe Phe Ile Pro Leu Val Ser Asn Asn Gly  
195 200 205

Asn Tyr Thr Cys Val Val Thr Tyr Pro Glu Asn Gly Arg Leu Phe His  
210 215 220

Leu Thr Arg Thr Val Thr Val Lys Val Val Gly Ser Pro Lys Asp Ala  
225 230 235 240

Leu Pro Pro Gln Ile Tyr Ser Pro Asn Asp Arg Val Val Tyr Glu Lys  
245 250 255

Glu Pro Gly Glu Glu Leu Val Ile Pro Cys Lys Val Tyr Phe Ser Phe  
260 265 270

Ile Met Asp Ser His Asn Glu Val Trp Trp Thr Ile Asp Gly Lys Lys  
275 280 285

Pro Asp Asp Val Thr Val Asp Ile Thr Ile Asn Glu Ser Val Ser Tyr  
290 295 300

Ser Ser Thr Glu Asp Glu Thr Arg Thr Gln Ile Leu Ser Ile Lys Lys  
305 310 315 320

Val Thr Pro Glu Asp Leu Arg Arg Asn Tyr Val Cys His Ala Arg Asn  
325 330 335

Thr Lys Gly Glu Ala Glu Gln Ala Ala Lys Val Lys Gln Lys Val Ile  
340 345 350

Pro Pro Arg Tyr Thr Val Glu Leu Ala Cys Gly Phe Gly Ala Thr Val  
355 360 365

Phe Leu Val Val Val Leu Ile Val Val Tyr His Val Tyr Trp Leu Glu  
370 375 380

Met Val Leu Phe Tyr Arg Ala His Phe Gly Thr Asp Glu Thr Ile Leu  
385 390 395 400

Asp Gly Lys Glu Tyr Asp Ile Tyr Val Ser Tyr Ala Arg Asn Val Glu  
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Glu Glu Glu Phe Val Leu Leu Thr Leu Arg Gly Val Leu Glu Asn Glu  
420 425 430

Phe Gly Tyr Lys Leu Cys Ile Phe Asp Arg Asp Ser Leu Pro Gly Gly  
435 440 445

Asn Thr Val Glu Ala Val Phe Asp Phe Ile Gln Arg Ser Arg Arg Met  
450 455 460

Ile Val Val Leu Ser Pro Asp Tyr Val Thr Glu Lys Ser Ile Ser Met  
465 470 475 480

Leu Glu Phe Lys Leu Gly Val Met Cys Gln Asn Ser Ile Ala Thr Lys  
485 490 495

Leu Ile Val Val Glu Tyr Arg Pro Leu Glu Gln Pro His Pro Gly Ile  
500 505 510

Met Gln Leu Lys Glu Ser Val Ser Phe Val Ser Trp Lys Gly Glu Lys  
515 520 525

Ser Lys His Ser Gly Ser Lys Phe Trp Lys Ala Leu Arg Leu Ala Leu  
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Pro Leu Arg Ser Leu Ser Ala Ser Ser Gly Trp Asn Glu Ser Cys Ser  
545 550 555 560

Ser Gln Ser Asp Ile Ser Leu Asp His Val Gln Arg Arg Ser Arg Leu  
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Lys Glu Pro Pro Glu Leu Arg Ser Ser Glu Arg Val Ser Gly Ala Glu  
580 585 590

Pro Ala Pro Gly Thr Met Ser Lys His Arg Gly Lys Pro Ser Ala Ala  
595 600 605

Cys Arg Cys Cys Val Thr Tyr Cys Glu Gly Glu Ser His Leu Arg Ser  
610 615 620

Lys Ser Arg Ala Glu Met His Thr His Pro Gln Trp Glu Thr His Leu  
625 630 635 640

Cys Lys Pro Pro Leu Gln Glu Ser Glu Ser Gln Trp Ile Gln Asn Gly  
645 650 655

Thr Arg Pro Glu Pro Ala Pro Gln Ile Ser Ala Leu Ala Leu Arg His  
660 665 670

Phe Thr Asp Leu Ser Asn Asn Asn Asp Phe Tyr Ile Leu  
675 680 685